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thyl-2,4',5',6'-tetramethoxybenzophenone which is referenced in Claims 2 and 5 were encompassed by the compounds addressed in the teaching of Curtze et al.¹⁾

It is, however, respectfully noted that applicants' formula (I) requires that the radical R of the OR substituents which is bonded to the phenyl ring on the right hand side of the formula be a C₁-C₄-alkyl radical (cf. Claims 1 and 4) or a methyl group (cf. Claims 2 and 5). The compounds which are addressed in the teaching of Curtze et al. carry in the corresponding position of the respective phenyl group a moiety designated as "OR³"²⁾ in which the radical R³ represents "a hydrogen atom or a protecting group"³⁾ wherein the term protecting group refers "to a group which is easily cleaved off without affecting the alkoxy groups present."⁴⁾ Exemplary protecting groups which are mentioned by Curtze et al. in this context are moieties such as esters of organic or inorganic acids and trihydrocarbylsilyl groups,⁵⁾ for example alkanoyl groups (alkyl-C(=O)-)⁶⁾ such as acetyl or pivaloyl,⁷⁾ or such as propionyl, butyryl, pentanoyl and benzoyl.⁸⁾

The alkyl group R of the moiety OR in applicants' formula (I) can clearly not be regarded as "a group which is easily cleaved off without affecting the alkoxy groups present", and the compounds of applicants' formula (I) can, therefore, not be regarded as being "embraced" by the compounds addressed in the reference. Moreover, the alkyl group R of the moiety OR in applicants' formula (I) can not even be regarded as an equivalent of the R³ radicals required in accordance with the teaching of Curtze et al. in light of the expressed requirement that R³ be "a group which is easily cleaved off without affecting the alkoxy groups" (emphasis added).

The foregoing, as well as applicants' remarks regarding the structural differences between applicants' formula (I) and the compounds of Curtze et al.,⁹⁾ shows that the reference relied upon by the

1) Cf. page 5, lines 16 to 20, of the Office action.

2) Cf. e.g. formula (I) set forth in col. 1, indicated lines 45 to 58, of US 6,127,570.

3) Cf. e.g. col. 1, indicated line 67, of US 6,127,570.

4) Cf. e.g. col. 3, indicated lines 7 to 10, of US 6,127,570.

5) Cf. e.g. col. 3, indicated lines 10 to 14, of US 6,127,570.

6) Cf. e.g. col. 3, indicated lines 14 to 16, of US 6,127,570.

7) Cf. e.g. col. 4, indicated lines 44 and 45, of US 6,127,570.

8) Cf. e.g. the groups mentioned as R³ in Table I, cols. 13 and 14, of US 6,127,570.

9) Cf. e.g. pages 1 and 2 of the reply dated June 10, 2005, which reply is herewith incorporated by reference.

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Examiner in the rejection fails to render the structural requirements of applicants' formula (I) *prima facie* obvious because the reference

- fails to provide for some kind of suggestion which would have motivated a person of ordinary skill to modify the structure of Curtze et al.'s compounds as is necessary to arrive at applicants' formula (I);
- fails to provide for a reasonable expectation that the properties of compounds which carry an alkyl group instead of the hydrogen atom or the protecting group of Curtze et al. would be similar to the properties exhibited by the prior art compounds, and
- fails to teach or suggest all of the structural limitations of applicants' formula (I).

Those three criteria would, however, have to be met in order to establish a *prima facie* case of obviousness, and the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and cannot be based on the applicant's disclosure.¹⁰⁾ The subject matter of applicants' claims is, in light of the structural particularities of the compounds which are referenced in applicants' claims, clearly not rendered *prima facie* obvious by the teaching of the Curtze et al. reference.

Furthermore, applicants' claims are drawn to a method in which the compounds of applicants' formula (I) are employed to control *Pseudocercospora herpotrichoides* in crop plants rather than the compounds *per se*. As reiterated in the foregoing the teaching of Curtze et al. fails to suggest or imply that the compounds which are required in accordance with applicants' invention can reasonably be expected to exhibit properties similar to the ones which are addressed by Curtze et al. for the compounds carrying a hydrogen or a protecting group where applicants' compounds carry an alkyl group. However, even assuming *arguendo* that the compounds referenced in applicants' claims could be expected to act similar to the compounds of the reference, the teaching of Curtze et al. would still be insufficient to establish a *prima facie* case of obviousness under Section 103(a).

Curtze et al. teach that their compounds control phytopathogenic fungi, especially ascomycetes, in particular powdery mildew diseases

10) *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

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such as those caused by *Blumeria (Erysiphe) graminis*, *Erysiphe cichoracearum*, *Podosphaera leucotrichia*, *Uromyces necator* and the like,¹¹⁾ ie. fungi which grow on plant surfaces, ie. foliar diseases. In contrast to the fungi referenced in the teaching of Curtze et al., the fungus *Pseudocercospora herpotrichoides* which is controlled in accordance with applicants' method grows within the plant tissue. As explained by Dr. Stierl in his Declaration dated January 16, 2006, the effectivity of a compound against fungi growing within the plant tissue is affected by a variety of factors and it is therefore impossible to draw a conclusion as to the compounds effectivity against such phytopathogenic fungi based on the compound's effectivity against powdery mildew diseases.

Moreover, the mere fact that Curtze et al. refer in it's broadest aspect, to phytopathogenic fungi is not deemed to render the selection of the fungus *Pseudocercospora herpotrichoides* prima facie obvious within the meaning of Section 103(a).

Obviousness of a species or subgenus which is embraced by a prior art genus should be analyzed no differently than any other claim for purposes of 35 U.S.C. 103. "The section 103 requirement of unobviousness is no different in chemical cases than with respect to other categories of patentable inventions."¹²⁾ A determination of patentability under 35 U.S.C. 103 should be made upon the facts of the particular case in view of the totality of the circumstances,¹³⁾ and the use of per se rules is improper for determining whether claimed subject matter would have been obvious under 35 U.S.C. 103.¹⁴⁾ More specifically, the fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a prima facie case of obviousness.¹⁵⁾ In fact, the Federal Circuit has "decline[d] to extract from *Merck & Co. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that . . . regardless of how broad, a disclosure of a chemical genus renders

11) Cf. e.g. col. 3, indicated line 60, to col. 4, indicated line 4, of US 6,127,570.

12) *In re Papesch*, 315 F.2d 381, 385, 137 USPQ 43, 47 (CCPA 1963).

13) See, e.g., *In re Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc).

14) See, e.g., *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *In re Ochial*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995); *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994).

15) *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious.").

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obvious any species that happens to fall within it."¹⁶⁾

To establish a prima facie case of obviousness in a genus-species situation, as in any other 35 U.S.C. 103 case, it is essential that there be some motivation or suggestion to make the claimed invention in light of the prior art teachings.¹⁷⁾ "[A] proper analysis under §103 requires, inter alia, consideration of . . . whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process."¹⁸⁾ Regardless of the type of disclosure, the prior art must provide some motivation to one of ordinary skill in the art to make the claimed invention in order to support a conclusion of obviousness. "The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art."¹⁹⁾ The teaching of *Curtze et al.* contains nothing which would draw the attention of a person of ordinary skill in the art to any phytopathogenic fungi other than those causing foliar diseases so that the motivation to turn into the direction of *Pseudocercospora herpotrichoides* is lacking. In addition, Dr. Stierl's explanations and remarks corroborate that a reasonable expectation of success was lacking. Also, the data in presented in Dr. Stierl's Declaration of June 06, 2005, show that the compounds referenced in applicants' claims exhibit an unexpectedly improved effectivity against *Pseudocercospora herpotrichoides* as compared to a representative compound of *Curtze et al.*

The Examiner's position that the subject matter of applicants' claims was rendered obvious under Section 103(a) in light of the teaching of *Curtze et al.* is therefor not deemed to be well taken.

16) *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992). See also *In re Deuel*, 51 F.3d 1552, 1559, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995).

17) See, e.g., *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996) ("[T]he mere possibility that one of the esters or the active methylene group-containing compounds . . . could be modified or replaced such that its use would lead to the specific sulfoalkylated resin recited in claim 8 does not make the process recited in claim 8 obvious "unless the prior art suggested the desirability of [such a] modification" or replacement.") (quoting *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

18) *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

19) *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). See also *Hodosh v. Block Drug Co.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

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Favorable reconsideration and withdrawal of the rejection is solicited.

The Examiner also reiterated her position that the subject matter of applicants' Claims 1, 2, 4 and 5 was unpatentable under the judicially created doctrine of obviousness-type double patenting in light of Claims 1 to 5 of *Sieverding et al.* (US 6,696,497). The Examiner stated in this context inter alia that the rejection was maintained because no terminal disclaimer had been filed by applicants.²⁰⁾

The determination of obviousness-type double patenting essentially involves a determination of unobviousness under 35 U.S.C. §103, with the exception that the patent disclosure is not applicable as "prior art".²¹⁾ Corresponding to the determination under Section 103, there must be some clear evidence to establish why a person of ordinary skill would make the modification which is necessary to arrive at the claimed invention, and the evidence must be properly qualifiable as "prior art".²²⁾ Also, in both determinations, the level of skill in the art alone cannot be relied upon to provide the suggestion to modify the prior art.²³⁾ Accordingly, to establish unpatentability under the judicially created doctrine of obviousness-type double patenting, the reference, if considered as prior art and in accordance with a determination under Section 103, has to establish that the claimed invention was *prima facie* obvious.

The teaching of *Sieverding et al.* relates to a fungicidal composition²⁴⁾ which comprises synergistically effective amounts of

(a) a benzophenone which generically encompasses applicants' compounds (I) and the compound 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone, and

(b) a valinamide compound represented by a formula (II),

and which is effective against a broad variety of phytopathogenic fungi²⁵⁾ in particular on dicotyledonous plants such as grapes, to-

20) Cf. page 2, lines 10 and 11, of the Office action.

21) Cf. *In re Braat*, 937 F.2d 589, 594, 19 USPQ2d 1289, 1293 (Fed. Cir. 1991); *In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970).

22) Cf. *In re Kaplan*, 789 F.2d 1574, 1580, 229 USPQ 678, 683 (Fed. Cir. 1986); *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985), vacated 475 U.S. 809, 229 USPQ 478 (1986), on remand 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir.), cert. denied 481 U.S. 1052 (1987).

23) Cf. *In re Kaplan*, 789 F.2d 1574, 1580, 229 USPQ 678, 683 (Fed. Cir. 1986).

24) Cf. col. 1, indicated lines 7 to 65, of US 6,696,497.

25) Cf. col. 6, indicated lines 10 to 24, of US 6,696,497.

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bacco, potato, tomato, fruit crops, oil seed crops, vegetables and ornamentals, and also on monocotyledonous crops.²⁶⁾

The teaching, of the subject matter of Claims 1 to 5, of *Sieverding et al.* differs from the method which is defined in applicants' claims, inter alia, because the fungicidal effect which is achieved in accordance with *Sieverding et al.*'s teaching or claims is due to an application of a combination of synergistic amounts of two different compounds. Applicants' claims in contrast thereto require that *Pseudocercospora herpotrichoides* be controlled by application of effective amounts of the compound represented by applicants' formula (I). The Examiner will note that the data which are compiled in *Sieverding et al.*'s tables in cols. 11 and 12, of US 6,696,497 corroborate that the synergistic cooperation of the two constituents is necessary to arrive at a suitable fungicidal effect. Moreover, the data show that the benzophenone designated in the reference as BP-4 has no or only an insufficient effect when it is applied without the valinamide co-constituent of the synergistic mixture taught in the reference. Correspondingly, where the reference enumerates phytopathogenic fungi which can be controlled, such a control requires according to the claims and the disclosure of *Sieverding et al.* that synergistically effective amounts of the benzophenone (a) and the valinamide (b) be employed. In fact, neither the claims nor the disclosure of *Sieverding et al.* suggest or imply that one of the constituents, when taken alone, is suitable to control the fungi mentioned in col. 6, indicated lines 10 to 24, of US 6,696,497.

Accordingly, a person of ordinary skill in the art could not reasonably derive from the teaching of *Sieverding et al.*, or from Claims 1 to 5 of the reference, that a benzophenone compound falling within the realm of the benzophenones which are encompassed by *Sieverding et al.*'s formula would be particularly suitable to control any specific fungus which falls within the broad variety of phytopathogenic fungi enumerated by *Sieverding et al.*

The teaching of *Sieverding et al.* further differs from the method which is defined in applicants' claims in that *Sieverding et al.* merely generically enumerate genera of phytopathogenic fungi without, however, specifying the fungus *Pseudocercospora herpotrichoides*.

It is well settled that obviousness within the meaning of Section 103(a) requires more than the mere possibility to make a selection

²⁶⁾ Cf. col. 6, indicated lines 25 to 29, of US 6,696,497.

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from the generic disclosure of a reference which mirrors the combination of requirements set forth in an applicant's claim. For obviousness under the provisions of Section 103(a), the reference also has to provide some teaching or suggestion which would motivate a person of ordinary skill in the art to make the particular selection which results in the claimed combination.²⁷⁾ Neither the teaching of *Sieverding et al.* nor in the general technical background knowledge of a person of ordinary skill in the art provides any information which would have motivated a person of ordinary skill to select the fungus *Pseudocercospora herpotrichoides* from the genera of phytopathogenic fungi enumerated by *Sieverding et al.* and to select the benzophenones of applicants' formula I from the realm of the benzophenones which *Sieverding et al.* use as a co-constituent for synergistic fungicidal mixtures in order to control the fungus *Pseudocercospora herpotrichoides*. Where as here the motivating teaching or suggestion is not found in the reference, any possible selection and combination within the generic disclosure is equally likely and the reference is no more than an invitation to make and try out each of the possible selections and combinations. "Obvious to try" is, however, not a proper basis for finding that a claimed invention is unpatentable under Section 103(a).²⁸⁾ Also, under those circumstances, a focus on the particular selection which results in the claimed combination would have to be regarded as being based on hindsight.²⁹⁾

As mentioned in the context of the rejection based on the teaching of *Curtze et al.*, three basic criteria have to be met in order to establish a *prima facie* case of obviousness:

- (1) There must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference,
- (2) there must be a reasonable expectation of success, and
- (3) the prior art reference must teach or suggest all of the claim limitations.

Additionally, the teaching or suggestion to make the claimed combina-

27) Cf. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). See also *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992).

28) Cf. *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989) where the Court held that an invention was merely "obvious to try" if the prior art gives either no indication of which parameters are critical or no direction as to which of the many possible choices is likely to be successful.

29) Cf. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).

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tion and the reasonable expectation of success must both be found in the prior art and cannot be based on the applicant's disclosure.³⁰⁾ The teaching of *Sieverding et al.*, or Claims 1 to 5 of the reference, are not deemed to provide the requisite suggestion or motivation to employ effective amounts of a compound of applicants' formula (I) in the control of the fungus *Pseudocercospora herpotrichoides*. Since the reference emphasizes the use of a combination of two ingredients there is not deemed to be a reasonable expectation that one of the compounds would suffice to effect the control which is sought. Last but not least, the *Sieverding et al.* reference fails to teach or suggest all of the limitations which are set forth in applicants' claims because it fails to teach or suggest the control of the fungus *Pseudocercospora herpotrichoides* by application of effective amounts of the compound represented by applicants' formula (I).

For completeness sake it is also noted that the benzophenones which constitute component (a) of *Sieverding et al.*'s synergistic composition inter alia include compounds as taught by *Curtze et al.*³¹⁾ The explanations and showings presented in Dr. Stierl's Declarations are, therefore, equally applicable where the obviousness of applicants' claims is determined in light of the teaching or the claims of *Sieverding et al.*³²⁾

The Examiner also criticized that applicants had failed to address the respective rejection.³³⁾ However, applicants' remarks in the submission dated January 19, 2006, as well as the Declaration enclosed therewith clearly pertained not only to the rejection based on the *Curtze et al.* reference but also to the rejection based on the *Sieverding et al.* reference.

The Examiner argued that the Declaration of Dr. Stierl was not deemed to be persuasive because "controlling the *Pseudocercospora herpotrichoides* is known. Whether it grows in the plant tissue or on the surface of the leaves, the compound is useful to control *Pseudocercospora herpotrichoides*."³⁴⁾ For clarity it is respectfully emphasized that *Pseudocercospora herpotrichoides* grows in the plant

30) *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

31) Cf. e.g. col. 1, indicated lines 10 to 26, of US 6,696,497, and the definition of R³ of *Curtze et al.*

32) Cf. in particular page 3 et seq., of Dr. Stierl's Declaration dated January 16, 2006.

33) Cf. page 2, lines 11 and 12, of the Office action.

34) Cf. page 2, lines 13 to 17, of the Office action.

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tissue, not on the leaf surface. Moreover, the Examiner's position that controlling *Pseudocercospora herpotrichoides* with the compounds required in accordance with applicants' method is not deemed to be supported by the objective teaching of the *Sieverding et al.* reference or, for that matter, the objective teaching of *Curtze et al.*

The Examiner further stated that it was unclear from the Declaration why one of ordinary skill in the art would not have been motivated to use the compounds referenced in applicants' claims to control *Pseudocercospora herpotrichoides*.³⁵ It is believed that the supplemental remarks in the foregoing provide for the explanation sought by the Examiner.

In light of the foregoing and the remarks and submissions made by applicants in the papers dated June 10, 2005, and January 19, 2006, it is therefore respectfully requested that the rejection of Claims 1, 2, 4, and 5 based on Claims 1 to 5 of *Sieverding et al.* be withdrawn. Favorable action is solicited.

REQUEST FOR EXTENSION OF TIME:

A request and fee for a one month extension of time are submitted with applicants' Notice of Appeal of even date with this paper.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

Respectfully submitted,
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35) Cf. page 2, lines 18 to 20, of the Office action.